

REMARKS

In the Office Action, the Examiner allowed claims 63 and 64. Also, the Examiner objected to claims 12, 13, 15, 28, 29, 31, 44, 45, 47, 53, 54, and 56 as being dependent on a rejected base claim, but indicated that such claims would be allowable if rewritten in independent form. The Examiner rejected claim 22 under 35 U.S.C. 112, second paragraph, as being indefinite based on dependence from a canceled claim. Further, the Examiner rejected claims 1, 11, 17, 18, 27, and 57 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 5, 6, 7, 10, 14, 18, and 19 of U.S. Patent No. 5,754,448 to Edge et al. in view of U.S. Patent No. 5,668,890 to Winkelman.

The Examiner also rejected claims 1, 7, 17, 18, 23, 25-27, 30, 32-34, 41-43, 46, 48, 49, 52, 55, 57, and 58 under 35 U.S.C. 102(e) as being anticipated by Winkelman. In addition, the Examiner rejected claims 2, 3, 8-11, 14, 16, 20, 35, 36, 50, 51, 59, and 60 under 35 U.S.C. 103(a) as being unpatentable over Winkelman in view of U.S. Patent No. 5,844,699 to Usami et al. Finally, the Examiner rejected claims 4, 5, 21, 22, 37, 38, 61, and 62 under 35 U.S.C. 103(a) as being unpatentable over Winkelman in view of Usami et al. and U.S. Patent No. 5,268,754 to Van de Capelle et al.

In this Amendment, Applicants have canceled claim 23 and amended claims 1, 8, 17, 18, 22, 34, 49, 57, and 58. Accordingly, claims 1-5, 7-18, 20-22, 25-38, and 41-64 remain pending in the present application. Applicants have amended claim 22 to depend from claim 18, and thereby overcome the rejection under section 112, second paragraph. Applicants respectfully traverse the rejections under sections 102 and 103, as well as the obviousness-type double patenting rejection. With respect to the double patenting rejection, Applicants reserve comment on the relevance of the Edge et al. patent, and instead focus on the shortcomings of Winkelman relative to the claimed invention, as set forth below.

Winkelman, Usami et al., and Van de Capelle et al. fail to disclose or suggest a technique for characterizing a color imaging system, as claimed. In particular, the applied references provide no teaching that would have suggested obtaining color values representing output samples of a color imaging system, converting the color values using a white reference vector and a black reference vector, and adjusting the white reference vector using the black reference vector and the color values, as set forth in Applicants'

claims. Moreover, the applied references make no mention of the desirability of modification to incorporate such features.

It has become apparent to Applicants that the Examiner's reliance on the Winkelman reference stems from a basic misunderstanding of the claimed invention and the scope and content of Winkelman. In the written remarks below, Applicants attempt to strike at the core of this misunderstanding, and thereby better illustrate the differences between Winkelman and the claimed invention. In the event further discussion would be helpful, however, Applicants stand ready to address any remaining concerns at the Examiner's convenience. Accordingly, if necessary or beneficial, the Examiner is encouraged to contact the undersigned by telephone.

Winkelman bears virtually no relationship Applicants' claims. Indeed, Winkelman does not even disclose a system for characterizing a color imaging system. Rather, Winkelman is directed to a method for analyzing density and color cast of scanned images to determine appropriate image processing parameters for conversion and reproduction. Winkelman is concerned with analysis and conversion of the content of individual images, and not characterization of the overall output of a color imaging system. Consequently, Winkelman fails to anticipate or render obvious the claimed invention.

Winkelman operates on an image-by-image basis to produce setting parameters that change the appearance of the content of an individual image. In contrast, the claimed invention involves characterization of the output of a color imaging system such that the appearance of images produced by the system, regardless of specific content, can be reproduced accurately. The claimed invention provides a technique for matching the appearance of images on different imaging systems, whereas Winkelman focuses on changes to the content of individual images to improve appearance. Thus, Winkelman is devoted to the processing of image content. The claimed invention provides techniques for the characterization of imaging systems used to produce the content.

Winkelman discloses the use of histogram analysis to determine the overall lightness or darkness of a particular image. Based on that determination, the Winkelman system can be used to scale an image, correcting for over-exposure or under-exposure and optimizing for different color casts. If the histogram analysis indicates that the image has a lighter overall density, for example, the color values can be scaled to provide

higher gradation in the lighter areas. Winkelman is fixated on the specific content of the individual image, and analytical methods for changing that content to improve the appearance of the image for reproduction. Winkelman undertakes analysis of light image regions and dark image regions to characterize a particular image, and not the output range of the imaging system in general.

The discussion above should clarify the fundamental differences between Winkelman and the claimed invention. Such differences serve to underscore the significance of the features set forth in Applicants' claims. In particular, the claims require not the analysis of color values representative of individual image content, but the acquisition of color values representing output samples of a color imaging system. In this manner, the color imaging system can be characterized so that images, regardless of individual image content, can be accurately reproduced. Again, the color values do not represent individual image content, but rather the output range of the color imaging system. It is the color values in this output range that are selected to produce desired color content in an image.

Further, as claimed, first color values are converted to second color values using a white reference vector and a black reference vector. The white reference vector and black reference vector have nothing to do with analysis of light image regions and black image regions for an individual image, as contemplated by Winkelman. Instead, the white and black reference vectors characterize the output of the color imaging system in terms of a media white or white point and absolute black or black point realizable by the system for any image. Thus, the white and black reference vectors define the bounds of an output range used by the system to produce images, and not the lightness or darkness characteristics of a particular image.

Finally, the claims require that the white reference vector be adjusted using the black reference vector and the first color values being converted. Thus, for conversion, the white reference vector varies according to the first color values. Manipulation and scaling an image to adjust lightness or darkness, per Winkelman, clearly differs from the adjustment of a white reference vector. Moreover, upon processing the content of an image, Winkelman relies on a static white reference vector for the image. On the contrary, the claimed invention specifies the use of a white reference vector that is dynamic in the sense that it is adjusted according to the color values.

With the shortcomings identified above, Winkelman clearly fails to anticipate the claimed invention. Moreover, neither Winkelman nor the Usami et al. or Van de Capelle references provides any teaching that would have guided one of ordinary skill in the art to incorporate the various features required by Applicants' claims. Accordingly, Applicants respectfully request withdrawal of the rejections.

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration. The Assistant Commissioner is authorized to charge any underpayment and credit any overpayment to Deposit Account No. 09-0069.

Respectfully Submitted

August 9, 1999



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